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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,468	07/11/2000	Mead C. Killion	12463US02	2071

7590 05/20/2004  
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EXAMINER
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LAO, LUN S

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 05/20/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/614,468

Applicant(s)

KILLION ET AL.

Examiner

Lun-See Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Introduction*

1. This action is response to the amendment filed on 02/28/2004. Claims 22, 24 and 26 have been amended and claims 1-27 are pending.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johanson (US PAT. 3,975,599) in view of Berland (US PAT 4,142,072) and Mayer (US PAT. 5,341,433).

Consider claim 1, Johanson teaches a microphone assembly comprising:

a front inlet tube (see fig.4 (18));

a rear inlet tube (20);

an actuator switch (24) being movable between a first position (non-directional mode) in which the rear inlet tube (20) is plugged (see fig.4) and a second position in which the rear inlet tube is unplugged (directional mode); but Johanson does not clearly teaches a circuitry for sensing whether the actuator switch is in the first position or the second position, and for selecting an output based upon the position sensed; and a

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microphone cartridge having a front inlet port acoustically coupled to the front inlet tube and a rear inlet port acoustically coupled to the rear inlet tube;

However Berland teaches a microphone cartridge (7) having a front inlet port (2) acoustically coupled to the front inlet tube (13) and a rear inlet port (3) acoustically coupled to the rear inlet tube (11).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Johanson into Berland to provide a hearing aid with an outer front opening and an outer rear opening which are connectable to the respective of a membrane in a microphone within the housing of the hearing aid for directional use, and with mechanical means for closing the outer rear opening for omnidirectional use.

On the other hand, Mayer teaches a circuitry (see fig.1,3) for sensing (21) whether the actuator switch (16,6) is in the first position (value up) or the second position (value down), and for selecting an output based upon the position sensed(see col.5 line 22- col.6 line 5);

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Johanson into Meyer to provide as keys, switches, slides, switch-overs, joysticks, control elements, regulators, volume control or the like, are formed by pressure sensors or, respectively, pressure and position sensors.

Consider claim 12, Johanson teaches a microphone assembly comprising:

an actuator switch (see fig.4,24) being movable between a first position (non-directional mode) in which the second inlet tube is plugged and a second position (directional mode) in which the second inlet tube is unplugged; but, Johanson does not clearly teach a circuitry for selecting a first output when the actuator switch is in the first position, and a second output when the actuator switch is in the second position; and a microphone cartridge having a diaphragm; a first inlet tube acoustically coupled to a first side of the diaphragm; a second inlet tube acoustically coupled to a second side of the diaphragm.

However, Berland teaches a microphone cartridge having a diaphragm (membrane and see fig.1 (8));

a first inlet tube (2) acoustically coupled to a first side of the diaphragm (8);

a second inlet tube (3) acoustically coupled to a second side of the diaphragm (8);

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Johanson into Berland to provide a hearing aid with an outer front opening and an outer rear opening which are connectable to the respective of a membrane in a microphone within the housing of the hearing aid for directional use, and with mechanical means for closing the outer rear opening for omnidirectional use.

On the other hand, Mayer teaches a circuitry (see fig.1, 21) for selecting a first output when the actuator switch (6,16) is in the first position (value up), and a second output when the actuator switch is in the second position(value down) (see col.5 line 22-col.6 line 5);

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Johanson into Meyer to provide as keys, switches, slides, switch-overs, joysticks, control elements, regulators, volume control or the like, are formed by pressure sensors or, respectively, pressure and position sensors.

Consider claim 2-4 and 13-14, Johanson teaches the circuitry comprises an electronic contact and sensor switch (see fig4, 52) the microphone assembly of the electronic contact and sensor switch (see fig.4, 52)) comprises first and second conductors (56,54); and the microphone assembly of the actuator switch (24) has an electrical contact mounted therewith for providing electrical conduction between the first and second conductors (56,54 and see col.4 line 53-col.5 line 3).

Consider claims 5-6 and 15-16, Johanson teaches the microphone assembly of the circuitry (see fig.4, 62) selects a non-equalized output when the actuator switch (see fig.4, 24) is in the first position (non-directional mode), and an equalized (40) output when the actuator switch (see fig.4,24) is in the second position (directional mode), and the microphone assembly of the circuitry (62) selects a non-equalized output when the actuator switch (24) is in the first position (non-direction) in response to conduction between the first and second conductors (56,54) provided by the electrical contact (see col.4 line 53-col.5 line 3).

Consider claims 7 and 17 Johanson teaches the microphone assembly of the circuitry (see fig.4,62) selects an output having higher gain when the actuator switch (24) is in first (non-directional mode) position, and an output having lower gain when the

actuator switch (24) is in the second position (directional mode and see col.4 line 53-col.5 line 3).

Consider claims 8 and 18. Johanson teaches the microphone assembly of the circuitry (see fig.4, 62) selects an output having lower environmental noise reduction when the actuator switch is in the first position (non-directional mode), and an output having higher environmental noise reduction when the actuator switch is in the second position (directional mode) (see col.4 line 53-col.5 line 3).

Consider claims 9-11 and 19-20. Johanson teaches the microphone assembly of the further comprising a housing (see fig.1, 10), and wherein the circuitry (see fig.4, 62) is at least partially integral to the housing (see col.3 lines 10-35); and the circuitry (see fig.4, 62) is at least partially integral to the microphone cartridge (see fig.1, 10 and col.3 lines 10-35).

Consider claim 21. Johanson teaches the output selected (see fig.4, 62) is input to hearing aid circuitry (see col.4 line 53-col.5 line 59).

4. Claims 22, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berland (US PAT 4,142,072) in view of Bousset (US PAT. 5,850,665).

Consider claims 22, 24 and 26. Berland teaches a method of operating a microphone comprising:

plugging a sound inlet tube (see fig.1 3);

sensing that the sound inlet tube is plugged;

selecting a first output based on sensing that the sound inlet tube is plugged;

unplugging the sound inlet tube (3);  
sensing that the sound inlet tube is unplugged (see fig.2); and  
selecting a second output based on sensing that the sound inlet tube is unplugged (see col.2 line 53-col.3 line9), but Berland does not teach electrically sensing the sound inlet tube is plugged or unplugged.

However, Bousset teaches an electrically sensing (for connected or disconnected a sound tube) that a sound tube is plugged or unplugged (see col.5 line 30- col.6 line 13).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Berland into Bousset to provide a hearing aid more convenient for a user.

Claims 23, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berland (US PAT 4,142,072) as modified by Bousset (US PAT. 5,850,665) as applied to claims 22,24 and 27 above, and further in view of Ruegg (US PAT. 3,875,349) .

Consider claims 23,25,27, Berland and Bousset fails to teach further comprising inputting the selected output to hearing aid circuitry.

However, Ruegg teaches further comprising inputting the selected output (see fig.2, 23) to hearing aid circuitry (see col.3 lines 13-50).

Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Berland and Bousset into the teaching of Ruegg to provide the microphone system possesses a first microphone having spherical sensitivity characteristics and second microphone with directional sensitivity



characteristics, and wherein the amplifier can be selectively switched to either one of both microphones

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bryant (US PAT 5,933,510) is cited to show other related microphone for hearing aid and communications applications having switchable polar and frequency response characteristics.

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (703) 305-2259. The examiner can normally be reached on Monday-Friday from 8:00 to 6:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz, can be reached on (703) 305-4708.

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Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 whose telephone number is (703) 306-0377.

Lao, Lun-See  
Patent Examiner  
US Patent and Trademark Office  
Crystal Park 2  
(703305-2259)

  
**DUC NGUYEN**  
**PRIMARY EXAMINER**